

have been found during the prodromal stage, the author also injected subcutaneously blood from a patient who was developing symptoms during her puerperium, which later turned out to be a dementia precox. No effect was seen, but blood taken from the same patient four weeks later, during a fresh attack, and injected, was shortly followed by vertigo, and later by cardiac palpitation, cerebral pressure, and a marked feeling of fear. All these symptoms subsided on the following day. A similar experiment with the blood taken from a more advanced case in a condition of stupor at the time, was also followed by results which were much more marked and severe and did not subside for a week. The experiments were then continued on animals, and a basis secured for further investigation in regard to the changes which specific toxins contained in the circulating blood may cause in the central nervous system. The details are not suitable for a brief abstract. They consist mainly of observations made with the serum secured from the goat, which had been made neurotoxic for dogs by the continued subcutaneous injection of triturated cerebrum from the brains of dogs. Intracerebral injections of this goat serum in dogs was followed by well-marked pathological changes in the pyramidal cells of the cerebral cortex and later on a large aggregation of leucocytes around these degenerated cells. Similar pathological conditions have been found in patients afflicted with acute psychoses, and also in other cerebral diseases, but the author is not as yet prepared to draw final conclusions until further proof has been secured.

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MORPHINE AND OTHER PHENANTHRENE DERIVATIVES. P. Bergell and R. Pschorr (*Zeitschrift f. Physiologische Chemie*, Vol. 38, Nos. 1, 2).

It is taught by chemists that morphine is derived from phenanthrene, a cyclic hydrocarbon having the symbol $C_{14}H_{10}$; the basic character of morphine being determined, like that of all other alkaloids, by the presence of nitrogen. According to the authors, all the investigations that have so far sought to attribute the physiological action of morphine to single atomic groups, have been carried out almost entirely upon nitrogenous compounds related to morphine. The authors sought to determine to what extent the physiological action of morphine depends upon non-nitrogenous molecular groups, more particularly phenanthrene and its non-nitrogenous derivatives. They find that phenanthrene itself is inert, but that oxy-phenanthrene, or phenanthrol ($C_{14}H_9OH$) produces in mammals severe tetanic seizures. The position of the hydroxyl group in the molecule has no influence on the physiological effect. Similar symptom-complexes are produced by a carbon- and a sulpho-acid of phenanthrene. No narcotic effect was observed in this entire group. To what extent the effect of phenanthrol may be brought into relation to that of morphine which contains the phenanthrol-complex, and whether the behavior of this class of bodies affords any explanation of the tetanic components of morphine-action—both of these questions the authors consider as still unanswerable. Substantially different from the action of phenanthrol and its carbon-acids, is that of derivatives of phenanthrene-quinone. These substances, both in the test-tube and in the organism, show a decided power of forming methemoglobin, which power is to be attributed to the prepondering influence of the quinone group. None of these compounds produces the above described tetanic state. Epiosin, a methyl derivative of phenanthrene, also produces methemoglobinemia. It is significant that in pigeons, which show an extraordinary resistance toward morphine, severe toxic manifestations are produced by epiosin. Evidently there is some connection between the narcotic and other manifestations of morphine and the methemoglobinemia produced by some of its derivatives.

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